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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|----------------------------|------------------|
| 10/805,805 | 03/22/2004 | Mark S. Manasse | 225667 | 9958 |
| 41505 7590 04/10/2007 WOODCOCK WASHBURN LLP (MICROSOFT CORPORATION) CIRA CENTRE, 12TH FLOOR 2929 ARCH STREET PHILADELPHIA, PA 19104-2891 | | | EXAMINER STACE, BRENT S | |
| | | | ART UNIT 2161 | PAPER NUMBER |
| SHORTENED STATUTORY PERIOD OF RESPONSE | | MAIL DATE | DELIVERY MODE | |
| 3 MONTHS | | 04/10/2007 | PAPER | |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/805,805

Applicant(s)

MANASSE, MARK S.

Examiner

Brent S. Stace

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Remarks

1. This communication is responsive to the amendment dated January 10th 2007. In the amendment dated January 10th 2007, Claims 1-22 are pending, Claims 1, 6, 11, 14, 17, 21, and 22 are amended, and Claims 1, 11, 14, 17, 21, and 22 are independent Claims. This action is made FINAL.

Response to Arguments

2. Applicant's arguments dated January 10th 2007 with respect to Claims 1-22 have been considered but are moot in view of the new ground(s) of rejection.
3. As to Applicant's arguments with respect to Claims 1-22 for the prior art(s) allegedly not teaching or suggesting "wherein the number of bits of precision is reduced from a number of bits used in the previous method by removing at least one of the most precise bits of the supersample that were used in the previous method," the examiner respectfully notes that this argument is moot in view of the new ground(s) of rejection below.

Furthermore, applicant's arguments appear incorrect. Applicant submits that "the number of bits in a fingerprint/supersample is directly related to how many samples (e.g. signature points) are used to generate the signature [in Broder] (Broder, Col. 3, 43-48)." However, the cited portion of Broder in the argument only deals with clients displaying files (web pages) on browser applications. The cited portion of Broder claiming to have

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support for the applicant's argument has little if anything to do with the applicant's argument. Also, contrary to the applicant's argument, Broder appears to create a 64-bit signature regardless of how many samples/"signature points" are used to generate it as seen in at least Broder col. 6, lines 54-65 with Broder, col. 8, lines 45-65 with Broder, col. 9, lines 11-19.

4. Any other claims argued merely because of a dependency on a previously argued claim(s) in the arguments presented to the examiner, January 10th 2007, are moot in view of the examiner's interpretation of the claims and art and are still considered rejected based on their respective rejections from at least a prior Office action (recited below).

Response to Amendment

Specification

5. In light of the applicant's respective arguments or respective amendments, the previous specification objections to the specification have been withdrawn.

Claim Rejections - 35 USC § 112

6. New 35 USC § 112 rejections are warranted by the amended claims.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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7. Claims 1-22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Support in the specification could not be found for the amended claims subject matter of removing bits. The specification merely has support for the reduction of bits from a 64 bit integer to a 16 bit integer by generating a 16 bit integer, not by generating a 64 bit integer then removing bits. Reducing bits, in this case, is not removing bits. Reducing, in this case, refers to using 16 bits which is a reduction compared to 64 bits. As such, this appears to be new matter.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 1-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

10. The term "most" in Claims 1 and 17 is a relative term that renders the claim indefinite. The term "most" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The term "most" refers to removing some bits in a string of bits where the string of bits (0's and 1's) represents a value. Removing bits in a string of bits can potentially change the value.

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Removing the "most precise bits" could refer to removing the left most bits, right most bits, and any series (contiguous or not) within the string of bits.

11. The term "least" in Claims 11, 14, 21, and 22 is a relative term that renders the claim indefinite. The term "least" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The term "least" refers to removing some bits in a string of bits where the string of bits (0's and 1's) represents a value. Removing bits in a string of bits can potentially change the value. Removing the "least precise bits" could refer to removing the left most bits, right most bits, and any series (contiguous or not) within the string of bits.

12. Claims 1 and 17 recite the limitation "the most precise bits" in line 11 (for example. There is insufficient antecedent basis for this limitation in the claim.

13. Claims 11, 14, 21, and 22 recite the limitation "least precise bits" in line 5 (for example. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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15. Claims 1-5, 7-10, and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,349,296 (Broder et al.) in view of U.S. Patent No. 6,058,410 (Sharangpani), further in view of U.S. Patent No. 6,658,423 (Pugh et al.).

For **Claim 1**, Broder teaches: "A method for detecting similar objects in a collection of such objects, [Broder, col. 4, lines 6-15 with Broder, Fig. 3] comprising, for each of two objects:

- modifying a previous method for detecting similar objects [Broder, col. 4, lines 6-15 with Broder, Fig. 3] wherein the modifying comprises:
- combining a number of samples of features into each of a total number of supersamples, [Broder, col. 7, lines 20-32 with Broder, Fig. 3]
- ...each of the total number of supersamples to a number of bits of precision, [Broder, col. 9, lines 11-15] and
- requiring a number of matching supersamples out of the total number of supersamples in order to conclude that the two objects are sufficiently similar" [Broder, col. 9, lines 1-3 with Broder, col. 9, lines 11-12 with Broder, col. 9, line 19].

Broder discloses the above limitations but does not expressly teach:

- "so that memory requirements are reduced
- while avoiding false detections approximately as well as in the previous method,
- wherein the number of samples is reduced from a number of samples used in the previous method;

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- compressing...wherein the number of bits of precision is reduced from a number of bits of precision used in the previous method by removing at least one of the most precise bits of the supersample that were used in the previous method;
- wherein the number of matching supersamples is greater than a number of matching supersamples required in the previous method."

With respect to Claim 1, an analogous art, Sharangpani, teaches:

- "so that memory requirements are reduced [Sharangpani, col. 1, lines 22-27 with Broder, col. 9, lines 11-15]
- compressing...wherein the number of bits of precision is reduced from a number of bits of precision used in the previous method by removing at least one of the most precise bits of the supersample that were used in the previous method" [Sharangpani, col. 1, lines 22-27 with Broder, col. 9, lines 11-15].

With respect to Claim 1, an analogous art, Pugh, teaches:

- "while avoiding false detections approximately as well as in the previous method, [Pugh, col. 3, lines 35-43]
- wherein the number of samples is reduced from a number of samples used in the previous method; [Pugh, col. 9, lines 5-10 with Pugh, col. 9, lines 27-32 with Pugh, cols. 11-12, lines 65-3 with Broder, col. 5, lines 45-50 with Broder, col. 8, lines 62-67]
- wherein the number of matching supersamples is greater than a number of matching supersamples required in the previous method" [Pugh, col. 3, lines 35-

43 with Broder, col. 9, lines 1-3 with Broder, col. 9, lines 11-12 with Broder, col. 9, line 19].

It would have been obvious to one of ordinary skill in the art at the time of invention having the teachings of Sharangpani and Pugh and Broder before him/her to combine Sharangpani and Pugh with Broder because the inventions are in the field of applicant's endeavor or are reasonably pertinent to the particular problem with which the applicant is concerned.

Sharangpani and Pugh's invention would have been expected to successfully work well with Broder's invention because the inventions use computers and signatures/fingerprints with bits to detect duplicates. Broder discloses a (previous) method for clustering closely resembling data objects comprising samples, supersamples, and finding similar documents. However, Broder does not explicitly disclose a reduction in samples to form a supersample, reduction in bits of precision for the fingerprints, and a greater number of matching supersamples to have objects sufficiently similar. Sharangpani discloses a method and apparatus for selecting a rounding mode for a numeric operation comprising truncating (removing) any number of bits to a desired precision. Pugh discloses detecting duplicate and near-duplicate files comprising detecting duplicates using, essentially, any number of matching fingerprints where fingerprints are combined from, essentially, any number of samples.

It would have been obvious to one of ordinary skill in the art at the time of invention having the teachings of Sharangpani and Pugh and Broder before him/her to take the removal/truncation of bits from Sharangpani, and the content of the fingerprints

and matching requirements from Pugh and install them into the invention of Broder, thereby offering the obvious advantage of a reduced memory footprint (by using smaller fingerprints/signatures) and having an reduced number of false positives.

Furthermore, it appears that the Applicant's claimed invention is a mere modification of numbers, parameters, and thresholds from the previous method. For instance, Broder, at the very least, teaches that other ranges of numbers, variables, parameters, and thresholds can be used in stating that certain numbers, variables, parameters, and thresholds were selected on an exemplary basis (Broder, col. 8, lines 62-67). As such, MPEP 2144.05 should be observed since the claimed invention appears that it is claiming an obvious optimization of ranges. Court cases of interest are *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955), *Peterson*, 315 F.3d at 1330, 65 USPQ2d at 1382, *In re Hoeschele*, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969), *Merck & Co. Inc. v. Biocraft Laboratories Inc.*, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), *cert. denied*, 493 U.S. 975 (1989), *In re Kulling*, 897 F.2d 1147, 14 USPQ2d 1056 (Fed. Cir. 1990), *In re Geisler*, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997), *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977), and *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claim 2 can be mapped to Broder (as modified by Sharangpani and Pugh) as follows: "The method of claim 1 wherein requiring the number of matching supersamples comprises requiring all but one of the total number of supersamples to match" [Pugh, col. 3, lines 35-43 with Broder, col. 9, lines 1-3 with Broder, col. 9, lines 11-12 with Broder, col. 9, line 19].

Claim 3 can be mapped to Broder (as modified by Sharangpani and Pugh) as follows: "The method of claim 1 wherein requiring the number of matching supersamples comprises requiring all but two of the total number of supersamples to match" [Pugh, col. 3, lines 35-43 with Broder, col. 9, lines 1-3 with Broder, col. 9, lines 11-12 with Broder, col. 9, line 19].

Claim 4 can be mapped to Broder (as modified by Sharangpani and Pugh) as follows: "The method of claim 1 wherein requiring the number of matching supersamples comprises requiring all supersamples to match" [Pugh, col. 3, lines 35-43 with Broder, col. 9, lines 1-3 with Broder, col. 9, lines 11-12 with Broder, col. 9, line 19].

Claim 5 can be mapped to Broder (as modified by Sharangpani and Pugh) as follows: "The method of claim 1 wherein combining the number of samples into each of the total number of supersamples comprises combining four samples into each of the total number of supersamples, [Pugh, col. 9, lines 5-10 with Pugh, col. 9, lines 27-32 with Pugh, cols. 11-12, lines 65-3] wherein the number of samples used in the previous method is 14" [Broder, col. 5, lines 45-50 with Broder, col. 8, lines 62-67].

Claim 7 can be mapped to Broder (as modified by Sharangpani and Pugh) as follows: "The method of claim 5 wherein requiring the number of matching supersamples comprises requiring five supersamples of seven to match, [Pugh, col. 3, lines 35-43 with Pugh, cols. 11-12, lines 65-3 with Broder, col. 8, lines 62-67 with Broder, col. 9, lines 11-20] wherein the number of matching supersamples required in the previous method is two supersamples of six" [Broder, col. 9, lines 15-20].

Claim 8 can be mapped to Broder (as modified by Sharangpani and Pugh) as follows: "The method of claim 1 wherein the objects are documents, [Broder, col. 11, lines 8-11 with Broder, col. 11, lines 19-28] and the method is used in association with a search engine query service to determine clusters of query results that are near-duplicate documents" [Broder, col. 11, lines 8-11 with Broder, col. 11, lines 19-28].

Claim 9 can be mapped to Broder (as modified by Sharangpani and Pugh) as follows: "The method of claim 8, further comprising selecting a single document in each cluster to report" [Pugh, col. 10, lines 50-57 or Broder, col. 10, lines 15-18].

Claim 10 can be mapped to Broder (as modified by Sharangpani and Pugh) as follows: "The method of claim 9 wherein selecting the single document is by way of a ranking function" [Pugh, col. 10, lines 50-57].

Claims 17-20 encompass substantially the same scope of the invention as that of Claims 1-4, respectfully, in addition to a computer-readable medium and some instructions for performing the method steps of Claims 1-4, respectfully. Therefore, Claims 17-20 are rejected for the same reasons as stated above with respect to Claims 1-4, respectfully.

16. Claims 6, 11-16, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,349,296 (Broder et al.) in view of U.S. Patent No. 6,058,410 (Sharangpani), in view of U.S. Patent No. 5,721,788 (Powell et al.), further in view of U.S. Patent No. 6,658,423 (Pugh et al.).

For **Claim 6**, Broder (as modified by Sharangpani and Pugh) teaches: "The method of claim 5 wherein:

- ...wherein the second number of bits of precision used in the previous method is 64; [Broder, col. 9, lines 11-15] and
- requiring the number of matching supersamples comprises requiring four supersamples of six to match, [Pugh, col. 3, lines 35-43 with Broder, col. 9, lines 11-20] wherein the number of matching supersamples required in the previous method is two supersamples of six" [Broder, col. 9, lines 15-20].

Broder (as modified by Sharangpani and Pugh) discloses the above limitations but does not expressly teach:

- "...compressing each supersample to the first number of bits of precision comprises recording each supersample to 16 bits of precision."

With respect to Claim 6, an analogous art, Powell, teaches:

- "...compressing each supersample to the first number of bits of precision comprises recording each supersample to 16 bits of precision" [Powell, col. 3, lines 35-48 with Sharangpani, col. 1, lines 22-27 with Broder, col. 9, lines 11-15].

It would have been obvious to one of ordinary skill in the art at the time of invention having the teachings of Powell and Broder (as modified by Sharangpani and Pugh) before him/her to combine Powell with Broder (as modified by Sharangpani and Pugh) because both inventions are directed towards computing bits in a computer and are in the field of applicant's endeavor or are reasonably pertinent to the particular problem with which the applicant is concerned.

Powell's invention would have been expected to successfully work well with Broder (as modified by Sharangpani and Pugh)'s invention because both inventions use computers computing bits. Broder (as modified by Sharangpani and Pugh) discloses a fingerprint comprising 64-bits representing a fingerprint. However, Broder (as modified by Sharangpani and Pugh) does not expressly disclose using a 16-bit fingerprint to represent a fingerprint/supersample. Powell discloses a method and system for digital image signatures comprising reduced (16) bits of precision for a fingerprint/signature.

It would have been obvious to one of ordinary skill in the art at the time of invention having the teachings of Powell and Broder (as modified by Sharangpani and Pugh) before him/her to take the size of the fingerprints/signatures from Powell and install it into the invention of Broder (as modified by Sharangpani and Pugh), thereby offering the obvious advantage of a reduced memory footprint (by using smaller fingerprints/signatures) and having an reduced number of false positives.

For **Claim 11**, Broder teaches: "A method for determining groups of near-duplicate items [Broder, col. 4, lines 6-15 with Broder, Fig. 3] in a search engine query result, [Broder, col. 11, lines 8-11 with Broder, col. 11, lines 19-28] comprising, for each of two items being compared."

Broder discloses the above limitation but does not expressly teach:

- "combining four samples of features into each of six supersamples;
- compressing each supersample to 16 bits of precision by removing each bit of the supersample other than the 16 least precise bits of the supersample; and
- requiring four of the six supersamples to match."

With respect to Claim 11, an analogous art, Pugh, teaches:

- “combining four samples of features into each of six supersamples; [Pugh, col. 9, lines 29-31 with Pugh, cols. 11-12, lines 65-3 Broder, col. 9, lines 16-22]
- requiring four of the six supersamples to match” [Pugh, col. 3, lines 35-43 with Broder, col. 9, lines 11-20].

With respect to Claim 11, an analogous art, Powell, teaches:

- “...compressing each supersample to 16 bits of precision” [Powell, col. 3, lines 35-48].

With respect to Claim 11, an analogous art, Sharangpani, teaches:

- “...by removing each bit of the supersample other than the 16 least precise bits of the supersample” [Sharangpani, col. 1, lines 22-27 with Broder, col. 9, lines 11-15].

It would have been obvious to one of ordinary skill in the art at the time of invention having the teachings of Sharangpani, Powell, and Pugh and Broder before him/her to combine Sharangpani, Powell, and Pugh with Broder because the inventions are in the field of applicant's endeavor or are reasonably pertinent to the particular problem with which the applicant is concerned.

Sharangpani, Powell, and Pugh's inventions would have been expected to successfully work well with Broder's invention because the inventions use computers and signatures/fingerprints with bits to detect duplicates. Broder discloses a (previous) method for clustering closely resembling data objects comprising samples, supersamples, and finding similar documents. However, Broder does not explicitly

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disclose a reduction in samples to form a supersample, reduction in bits of precision for the fingerprints, and a greater number of matching supersamples to have objects sufficiently similar. Sharangpani discloses a method and apparatus for selecting a rounding mode for a numeric operation comprising truncating (removing) any number of bits to a desired precision. Powell discloses a method and system for digital image signatures comprising reduced (16) bits of precision for a fingerprint. Pugh discloses detecting duplicate and near-duplicate files comprising detecting duplicates using, essentially, any number of matching fingerprints where fingerprints are combined from, essentially, any number of samples.

It would have been obvious to one of ordinary skill in the art at the time of invention having the teachings of Sharangpani and Pugh and Broder before him/her to take the removal/truncation of bits from Sharangpani, the size of the fingerprints/signatures from Powell, and the content of the fingerprints and matching requirements from Pugh and install them into the invention of Broder, thereby offering the obvious advantage of a reduced memory footprint (by using smaller fingerprints/signatures) and having an reduced number of false positives.

Furthermore, it appears that the Applicant's claimed invention is a mere modification of numbers, parameters, and thresholds from Broder's method. For instance, Broder, at the very least, teaches that other ranges of numbers, variables, parameters, and thresholds can be used in stating that certain numbers, variables, parameters, and thresholds were selected on an exemplary basis (Broder, col. 8, lines 62-67). As such, MPEP 2144.05 should be observed since the claimed invention

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appears that it is claiming an obvious optimization of ranges. Court cases of interest are *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955), *Peterson*, 315 F.3d at 1330, 65 USPQ2d at 1382, *In re Hoeschele*, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969), *Merck & Co. Inc. v. Biocraft Laboratories Inc.*, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), *cert. denied*, 493 U.S. 975 (1989), *In re Kulling*, 897 F.2d 1147, 14 USPQ2d 1056 (Fed. Cir. 1990), *In re Geisler*, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997), *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977), and *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claim 12 can be mapped to Broder (as modified by Sharangpani and Pugh) as follows: "The method of claim 11, further comprising selecting a single document in each cluster to report" [Pugh, col. 10, lines 50-57 or Broder, col. 10, lines 15-18].

Claim 13 can be mapped to Broder (as modified by Sharangpani and Pugh) as follows: "The method of claim 12 wherein selecting the single document is by way of a ranking function" [Pugh, col. 10, lines 50-57].

For **Claim 14**, Broder teaches: "A method for determining groups of near-duplicate items [Broder, col. 4, lines 6-15 with Broder, Fig. 3] in a search engine query result, [Broder, col. 11, lines 8-11 with Broder, col. 11, lines 19-28] comprising, for each of two items being compared."

Broder discloses the above limitation but does not expressly teach:

- "combining four samples of features into each of seven supersamples;
- compressing each supersample to 16 bits of precision by removing each bit of the supersample other than the 16 least precise bits of the supersample; and

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- requiring five of the seven supersamples to match.”

With respect to Claim 14, an analogous art, Pugh, teaches:

- “combining four samples of features into each of seven supersamples; [Pugh, col. 9, lines 29-31 with Pugh, cols. 11-12, lines 65-3 Broder, col. 9, lines 16-22]
- requiring five of the seven supersamples to match” [Pugh, col. 3, lines 35-43 with Broder, col. 9, lines 11-20].

With respect to Claim 14, an analogous art, Powell, teaches:

- “...compressing each supersample to 16 bits of precision” [Powell, col. 3, lines 35-48].

With respect to Claim 14, an analogous art, Sharangpani, teaches:

- “...by removing each bit of the supersample other than the 16 least precise bits of the supersample” [Sharangpani, col. 1, lines 22-27 with Broder, col. 9, lines 11-15].

It would have been obvious to one of ordinary skill in the art at the time of invention having the teachings of Sharangpani, Powell, and Pugh and Broder before him/her to combine Sharangpani, Powell, and Pugh with Broder because the inventions are in the field of applicant's endeavor or are reasonably pertinent to the particular problem with which the applicant is concerned.

Sharangpani, Powell, and Pugh's inventions would have been expected to successfully work well with Broder's invention because the inventions use computers and signatures/fingerprints with bits to detect duplicates. Broder discloses a (previous) method for clustering closely resembling data objects comprising samples,

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supersamples, and finding similar documents. However, Broder does not explicitly disclose a reduction in samples to form a supersample, reduction in bits of precision for the fingerprints, and a greater number of matching supersamples to have objects sufficiently similar. Sharangpani discloses a method and apparatus for selecting a rounding mode for a numeric operation comprising truncating (removing) any number of bits to a desired precision. Powell discloses a method and system for digital image signatures comprising reduced (16) bits of precision for a fingerprint. Pugh discloses detecting duplicate and near-duplicate files comprising detecting duplicates using, essentially, any number of matching fingerprints where fingerprints are combined from, essentially, any number of samples.

It would have been obvious to one of ordinary skill in the art at the time of invention having the teachings of Sharangpani and Pugh and Broder before him/her to take the removal/truncation of bits from Sharangpani, the size of the fingerprints/signatures from Powell, and the content of the fingerprints and matching requirements from Pugh and install them into the invention of Broder, thereby offering the obvious advantage of a reduced memory footprint (by using smaller fingerprints/signatures) and having an reduced number of false positives.

Furthermore, it appears that the Applicant's claimed invention is a mere modification of numbers, parameters, and thresholds from Broder's method. For instance, Broder, at the very least, teaches that other ranges of numbers, variables, parameters, and thresholds can be used in stating that certain numbers, variables, parameters, and thresholds were selected on an exemplary basis (Broder, col. 8, lines

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62-67). As such, MPEP 2144.05 should be observed since the claimed invention appears that it is claiming an obvious optimization of ranges. Court cases of interest are *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955), *Peterson*, 315 F.3d at 1330, 65 USPQ2d at 1382, *In re Hoeschele*, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969), *Merck & Co. Inc. v. Biocraft Laboratories Inc.*, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), *cert. denied*, 493 U.S. 975 (1989), *In re Kulling*, 897 F.2d 1147, 14 USPQ2d 1056 (Fed. Cir. 1990), *In re Geisler*, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997), *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977), and *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claims 15 and 16's limitation(s) have already been met by Claims 12 and 13's limitation(s), respectfully. Therefore, Claims 15 and 16 are rejected for the same reason(s) as stated above with respect to Claims 12 and 13, respectfully.

Claim 21 encompasses substantially the same scope of the invention as that of Claim 11, in addition to a computer-readable medium and some instructions for performing the method steps of Claim 11. Therefore, Claim 21 is rejected for the same reasons as stated above with respect to Claim 11.

Claim 22 encompasses substantially the same scope of the invention as that of Claim 14, in addition to a computer-readable medium and some instructions for performing the method steps of Claim 14. Therefore, Claim 22 is rejected for the same reasons as stated above with respect to Claim 14.

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17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

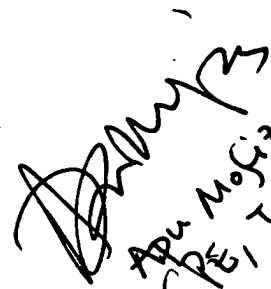
Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant is advised that, although not used in the rejections above, prior art cited on the PTO-892 form and not relied upon is considered materially relevant to the applicant's claimed invention and/or portions of the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brent S. Stace whose telephone number is 571-272-8372 and fax number is 571-273-8372. The examiner can normally be reached on M-F 9am-5:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Apu M. Mofiz can be reached on 571-272-4080. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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